

ADDITIONAL NOTES ON THE KWANGTUNG FLORA

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This third paper on the flora of Kwangtung Province, China, is essentially like its predecessors.¹ In it have been included the descriptions of fifteen presumably new species, and records of thirty-four previously described forms either new to China or new to Kwangtung Province. The material on which these data are based has been collected by Mr. C. O. Levine and Mr. G. W. Groff, of the Canton Christian College, ably assisted by their Chinese collector To Kang P'eng.

In this paper have also been included some necessary changes in nomenclature for Chinese species occasioned by a recent preliminary study of Loureiro's *Flora Cochinchinensis*. This work was published in 1790. It contains the descriptions of one thousand two hundred ninety-four species and a few varieties, of which about six hundred thirty were described as new, the others ascribed to binomials established by Linnaeus. A preliminary examination of Loureiro's work shows that he frequently described some species twice, or sometimes even three or four times, under the same or under different generic names. In nearly one hundred cases reductions have been made, so that the total number of distinct species described by Loureiro is probably less than one thousand two hundred. In his interpretation of Linnean species he made numerous and frequently grave errors, and in about three hundred seventy cases, or about 56 per cent, he was wrong in the interpretation of such species. Loureiro described as new a total of one hundred eighty-five genera of which forty-two are generally adopted as valid ones or, if strict priority be followed, eliminating those names excluded by the lists of *nomina conservanda* adopted by the Vienna and the Brussels Botanical Congresses, fifty should be adopted. Fourteen of Loureiro's new genera have never been satisfactorily reduced and remain as doubtful ones.

¹ Merrill, E. D., Notes on the flora of Kwangtung Province, China, *Philipp. Journ. Sci.* 12 (1917) Bot. 99-111; Notes on the flora of Loh Fau Mountain, Kwangtung Province, China, *op. cit.* 13 (1918) Bot. 123-161.

The title "Flora Cochinchinensis" is somewhat misleading, although more species were described from Cochin China than from any other single region. The geographic sources of his material are as follows: From Cochin China alone, about 697; from China alone, about 254; from both Cochin China and China, about 292; from tropical East Africa opposite Zanzibar, 29; from Mozambique, 9; from Zanzibar, 8; from India, 5; with 1 each from the Philippines, Sumatra, and the Malay Peninsula. Most of the Chinese material mentioned by Loureiro was from the immediate vicinity of Canton, where he resided for a period of three or four years.

In 1774 Loureiro mentions having sent about sixty specimens with descriptions to Europe, and in 1779 another lot of two hundred thirty specimens. I have not as yet succeeded in locating the first lot; the second shipment apparently consisted of those preserved in the herbarium of the British Museum. In the herbarium of the Paris Museum of Natural History ninety specimens from Loureiro are preserved, these having been secured by Geoffroy Saint-Hilaire in Lisbon in 1808. The bulk of Loureiro's collection, however, was retained by him in Lisbon and has long since been destroyed.²

Of the one thousand two hundred ninety-four species recognized by Loureiro not more than three hundred eighty are represented by known extant botanical material from his collections. In the much more numerous cases where Loureiro's types are no longer extant, the species must be interpreted from the original descriptions and such other data as can be secured for the regions in which the specimens were collected.

Considerable time was devoted to a preliminary study of Loureiro's species, and a manuscript commentary on the *Flora Cochinchinensis* was prepared by me and completed April 15, 1919. In this commentary Loureiro's species, so far as possible, were reduced to a family arrangement following the Engler and Prantl system. An attempt was made to determine the oldest valid specific name for each species and the necessary synonymy was added to explain the acceptance of the specific name in each case; all local names cited by Loureiro were recorded; and a more or less critical discussion of each species was given, together with the place of origin for each as cited by Loureiro. This manuscript was prepared in six copies, one of which is

² De Candolle, A, *La Phytographie* (1880) 430.

retained in Manila; one was sent to Dr. A. Chevalier, director of the Institut Scientifique in Saigon, Indo-China; one to the Canton Christian College, Canton, China; one to the library of the United States Department of Agriculture, Washington; one to the British Museum (Natural History), London; and one to the Muséum d'Histoire Naturelle, Paris. The essential object in preparing this manuscript was to establish a basis for further investigations regarding the status of Loureiro's species, as there still remains a high percentage of forms that are unintelligible from the descriptions alone. Eventually, when we shall have secured sufficient additional data to warrant doing so, it is hoped that a critical revision of Loureiro's species may be prepared and published.

The manuscript mentioned above summarizes in convenient form all the data at present available regarding the status of Loureiro's species in relation to those described by other authors, and from it can be determined those that are definitely known and those that are of a more or less doubtful status. Fourteen genera have not definitely been placed, of which twelve have not been referred to their proper families, while about three hundred seventy-five species are still more or less doubtful, and cannot, from the description alone, be safely correlated with those of other authors. Of these doubtful species many cannot be referred to their proper genera, and nearly fifty cannot be even referred to their proper families. Any great reduction in this rather high percentage of doubtful species cannot be expected until intensive field work shall have been prosecuted, with special reference to the problem, in southern China but more especially in Cochin China, in the vicinity of Hue where Loureiro resided.

GRAMINEAE

AGROPYRON Gaertner

AGROPYRON CILIARE (Trin.) Franchet in Nuov. Arch. Mus. Paris II
7 (1884) 151.

Triticum ciliare Trin. in Bunge Enum. Pl. Chin. Bor. (1831) 72.

Kwangtung Province, Shiuchow region, *To Kang P'eng* 2827,
April, 1919.

A species of wide distribution in northern and central China but no representative of the genus hitherto recorded from as far south as Kwangtung.

ARACEAE

POTHOS Linnaeus

2215 POTHOS REPENS (Lour.) comb. nov.

Flagellaria repens Lour. Fl. Cochinch. (1790) 212, ed. Willd. (1793) 263.

Pothos loureirii Hook. & Arn. Bot. Beechy's Voy. (1841) 220; Schott Aroid. 1 (1853) 23, t. 49, Prodr. (1860) 567; Engl. in DC. Monog. Phan. 2 (1879) 87; N. E. Br. in Journ. Linn. Soc. Bot. 36 (1903) 186, Curtis's Bot. Mag. t. 7744; Engl. Pflanzenreich 21 (1905) 35, f. 15.

Pothos terminalis Hance in Ann. Sci. Nat. V 5 (1866) 247.

Pothos microphyllus Schott Aroid. 1 (1853) 23, t. 40, f. B.

This species is known from Kwangtung Province, Hainan, and Tonkin, and is represented by *Levine 1989* from Teng Woo Mountain, Kwangtung Province, and by *Hongkong Botanic Garden 2243* from Hainan. The oldest valid specific name is here adopted, as Loureiro's description applies in all respects to the species as currently interpreted.

ARISAEMA Martius

1633 ARISAEMA KWANGTUNGENSE sp. nov. § *Pedatisecta*.

Herba circiter 40 cm alta; foliis solitariis, pedatisectis, segmentis plerumque 11, omnibus sessilibus, lanceolatis, acuminatis, 6 ad 9 cm longis, 1 ad 1.8 cm latis, basi angustatis; scapus 15 ad 18 cm longus; spathae tubus 5 cm longus, cylindricus, deorsum leviter angustatus; lamina ovata ad oblongo-ovata, 4 ad 5.5 cm longa, usque ad 3 cm lata, tenuiter acuminata, basi rotundata; spadiceis appendix usque ad 10 cm longa.

Corms unknown. Peduncular part of the plant 15 to 20 cm long, bearing one leaf and one inflorescence, the free petiolar part of the leaf 4 to 6 cm long. Leaves pedately lobed, the segments mostly 11, membranaceous, lanceolate, slenderly acuminate, narrowed below, all sessile, 6 to 9 cm long, 1 to 1.8 cm wide. Scape 15 to 18 cm long, smooth, slender. Spathe pale green, its tube cylindric, slightly narrowed below, 5 cm long, the lamina membranaceous, ovate to oblong-ovate, 4 to 5.5 cm long, up to 3 cm wide, base rounded, apex slenderly acuminate but not caudate. Spadices unisexual, the staminate ones about 3 mm in diameter, floriferous for a distance of about 3 cm, the appendage slender, smooth, up to 10 cm long, 1 to 1.3 mm in diameter.

Kwangtung Province, Shiuchow region, *Levine 3565*, May 3, 1919, scattered along roads northeast of Nam Wa monastery.

I am unable to refer this specimen to any previously described species. It is apparently allied to *Arisaema japonicum* Blume.

LILIACEAE

SCILLA Linnaeus

6592 **SCILLA SINENSIS** (Lour.) comb. nov.

Ornithogallum sinense Lour. Fl. Cochinch. (1790) 206.

Barnardia scilloides Lindl. in Bot. Reg. t. 1029.

Scilla chinensis Benth. Fl. Hongk. (1861) 373.

Loureiro's species is manifestly identical with the one currently known as *Scilla chinensis* Benth., the latter having been published independently of *Convallaria chinensis* Osbeck³ which is unquestionably a synonym although very imperfectly described. It is not uncommon in open grassy places in the vicinity of Canton whence Loureiro secured his material, and is represented by the following Kwangtung material: *Merrill 10048*, *Levine 3270*, *3421*, the latter with the recorded local name *shik sun tau*.

DISPORUM Salisbury

185 **DISPORUM CANTONIENSE** (Lour.) comb. nov.

Fritillaria cantoniensis Lour. Fl. Cochinch. (1790) 206.

Disporum pullum Salisb. in Trans. Hort. Soc. 1 (1812) 331.

Uvularia chinensis Ker in Curtis's Bot. Mag. t. 916.

Loureiro's material was from plants cultivated in Canton, for which he cites the local name *lin ni hoa*. Wright⁴ admits *Fritillaria cantoniensis* Lour. with the following comment: "A doubtful plant supposed by Gawler to be the same as *Uvularia chinensis*, which is now reduced to *Disporum pullum* Salisb." Hooker f.,⁵ under *Disporum pullum* Salisb. states: "The type of this species is the Chinese *Uvularia chinensis* of the Botanical Magazine, a purple flowered plant hardly distinguishable from shortly spurred specimens of *calcaratum*." Loureiro's description is ample and applies unmistakably to *Disporum*; his specific name should be retained for the Chinese form currently referred to *Disporum pullum* Salisb. I am by no means certain that all the Indo-Malayan material currently referred to *Disporum pullum* Salisb. is conspecific with the Chinese form.

³ Dagbok Ostind. Resa (1757) 220.

⁴ Journ. Linn. Soc. Bot. 26 (1903) 136.

⁵ Fl. Brit. Ind. 6 (1892) 260.

ASPARAGUS Tournefort

4339 ASPARAGUS COCHINCHINENSIS (Lour.) comb. nov.

Melanthium cochinchinense Lour. Fl. Cochinch. (1790) 216.*Asparagus lucidus* Lindl. in Bot. Reg. (1844) Misc. 29.

Loureiro observed this species in both China and Cochin China, and his description applies unmistakably to the well-known *Asparagus lucidus* Lindl., in spite of his description of the fruit as a capsule, this being a manifest error on the part of Loureiro. Kwangtung material representing the species, and for which the Cantonese name *tin tung* is recorded, corresponding to the form Loureiro cites, *tien muen tum*, is as follows: Merrill 10699, Levine 2174, Groff 2290, Dunn 6337. I have also examined the following specimens: Hongkong, Curran. Hainan, Miss Moninger 62. Formosa, Faurie 947, Bot. Inst. Tokyo 1570.

ZINGIBERACEAE

PHRYNIUM Willdenow

712 PHRYNIUM PLACENTARIUM (Lour.) comb. nov.

Phyllodes placentaria Lour. Fl. Cochinch. (1790) 13.*Phrynium parviflorum* Roxb. Fl. Ind. 1 (1820) 7; K. Schum. in Engl. Pflanzenreich 11 (1902) 54.

Loureiro observed this species both in China and in Cochin China. The generic name *Phyllodes* antedates *Phrynium*, but the latter is retained in the list of *nomina conservanda* adopted by the Vienna Botanical Congress. K. Schumann cites Loureiro's species as a doubtful synonym of *Phrynium capitatum* Willd., a purple-flowered species recorded from both China and Cochin China. From Loureiro's description of the flowers of his species as white I am convinced that he had specimens of the species currently known as *Phrynium parviflorum* Roxb., of which I have excellent specimens from Cochin China, Pierre 626, and from Kwangtung Province, China, Levine 1873, Groff 2524, with the recorded Cantonese name *chung ip*, corresponding to Loureiro's recorded Cantonese name *toung iep*.

ORCHIDACEAE

SPIRANTHES L. C. Richard

24819 SPIRANTHES ARISTOTELIA (Raeusch.) comb. nov.

Epidendrum aristotelia Raeusch. Nomencl. ed. 3 (1797) 265.*Aristotelia spiralis* Lour. Fl. Cochinch. (1790) 522.*Spiranthes australis* Lindl. in Bot. Reg. (1824) sub t. 823, non Koch.*Neottia sinensis* Pers. Syn. 2 (1807) 511.*Spiranthes sinensis* Ames Orch. 2 (1908) 53.

Aristotelia spiralis Lour., described by him as a new genus and species, was based on specimens from the vicinity of Canton.

It is represented by the following Kwangtung material, *Levine 1014, 2036, 2072*, growing in open grasslands, flowering in April and May. The species is one of very wide distribution, extending from India to Japan southward to New Zealand. Loureiro's type is preserved in the herbarium of the Paris Museum of Natural History.

MORACEAE

ANTIARIS Leschenault

ANTIARIS TOXICARIA (Pers.) Lesch. in Ann. Mus. Paris 17 (1810) 478.
Ipo toxicaria Pers. Syn. 2 (1807) 566.

Kwangtung Province, Kochow region, *To Kang P'eng 2755*, at Koon Shan temple, west of Kochow city, with the local name *to yiuk*.

Widely distributed in the Indo-Malayan region, but no representative of the genus previously recorded from China. This is the "deadly upas tree," its milky juice being widely used in the Indo-Malayan region for the purpose of poisoning spears and arrows.

CUDRANIA Trécul

CUDRANIA PUBESCENS Tréc. in Ann. Sci. Nat. Bot. III 8 (1847) 125.
Kwangtung Province, Shiuchow region, Tan Ha Shan, *To Kang P'eng 2847*, April 25, 1919.

Yunnan Province, China, Burma, Java; new to Kwangtung.

FICUS Linnaeus

FICUS VARIEGATA Blume Bijdr. (1825) 459; King in Ann. Bot. Gard. Calcutta 1 (1888) 169, *t. 212*.

Kwangtung Province, Kochow region, Ngau Tsai Wan, *To Kang P'eng 2743*, February 25, 1919, with the local name *tong kwo muk*.

This is the typical form of Blume's species, with broad, undulate-toothed leaves and large fruits. It is certainly specifically distinct from *Ficus chlorocarpa* Benth. which King referred to Blume's species as a variety. *Ficus chlorocarpa* Benth. is represented by *Merrill 10262* and *Levine 1889* from Kwangtung Province.

FICUS BENJAMINA Linn. Mant. 1 (1767) 129; King in Ann. Bot. Gard. Calcutta 1 (1887) 43, *t. 52*.

Kwangtung Province, Kochow region, Tai Shek Ling, *To Kang P'eng 2663*, March 18, 1919, with the local name *sai ip yung*.

Wild in various parts of the Malayan region and the Philip-

pinus, frequently planted in other parts of tropical Asia. Not before recorded from China proper, although known from Hainan.

LORANTHACEAE

LORANTHUS Linnaeus

LORANTHUS PENTANDRUS Linn. Mant. 1 (1767) 63; Blume Fl. Jav. Loranth. (1828) 33, t. 10; Hook. f. Fl. Brit. Ind. 5 (1886) 216.

Kwangtung Province, Sai Sha, Sz Ooi, *Groff 2403*, April 24, 1918.

This species has not previously been reported from China; the specimens agree closely with the descriptions and with our rather full series of Malayan specimens.

2934 **LORANTHUS PARASITICUS** (Linn.) comb. nov.

Scurrula parasitica Linn. Sp. Pl. (1753) 110, excl. syn. Camell et Petiver.

Loranthus scurrula Linn. Sp. Pl. ed. 2 (1762) 472, non auct. plur.

Loranthus estipitatus Stapf. (p. p.) in Trans. Linn. Soc. Bot. 4 (1894) 221; Forbes & Hemsl. in Journ. Linn. Soc. Bot. 26 (1844) 405; Dunn & Tutchter Fl. Hongk. Kwangtung (1912) 229 (as to the Chinese plant).

Kwangtung Province, vicinity of Canton, *Merrill 9987*, *Levine 1277*, 1866, 1948, *Groff 2314*. Hongkong, *Hongkong Herbarium 1232*.

The history of this species is as follows: The original binomial, *Scurrula parasitica* Linn., was manifestly based on a specimen, indicated by Linnaeus as originating in China, and in all probability collected by Osbeck near Canton; to the species Linnaeus erroneously referred "*Viscum vitici innascens* Camell. luz. 3 n. 36. Pet. gaz. t. 23, f. 8." Camell's description was based on specimens from Naic, Cavite Province, Luzon, and is manifestly *Loranthus philippensis* Cham. & Schlecht., an endemic Philippine species. Petiver's figure was in all probability based on Camell's drawing or on specimens from him, and a copy of the figure kindly supplied by Mr. Oakes Ames shows that it also represents *Loranthus philippensis* Cham. & Schlecht. The Linnean description does not apply to *Loranthus philippensis* Cham. & Schlecht., but does apply word for word to the Chinese form currently referred to *Loranthus estipitatus* Stapf, which is the commonest species of *Loranthus* found in the vicinity of Canton, the region in which Osbeck botanized. It does not apply to *Loranthus scurrula* of modern authors. In the second edition of the Species Plantarum Linnaeus made *Scurrula parasitica* the

basis of a new binomial, *Loranthus scurrula* Linn., but the earlier specific name should be adopted.

Fragments of recently collected material, cited above, were sent to London and were critically compared by Doctor Stapf with the Linnean type and with the type of *Loranthus estipitatus* Stapf. He writes under date of May 31, 1918, that as a result of his comparison this Chinese form must be accepted as *Loranthus scurrula* Linn. [= *L. parasiticus* (Linn.) Merr.], but that it is distinct from *L. estipitatus* Stapf. *Loranthus chinensis* DC is closely allied, if not identical.

2935 LORANTHUS LEVINEI sp. nov. § *Scurrula*.

Frutex parasiticus, ramis usque ad 60 cm longis, teretibus, glabris, minute lenticellatis, ramulis dense ferrugineo-puberulis; foliis oblongis, coriaceis, obtusis, basi obtusis ad rotundatis, usque ad 8 cm longis, supra glabris, nitidis, olivaceis, subtus densissime ferrugineo-puberulis vel tomentosus, nervis utrinque 4 ad 6, supra distinctis, subtus obscuris; floribus axillaribus, 4-meris, fasciculatis, circiter 2.5 cm longis, curvatis, densissime ferrugineo-tomentosis, pedunculis 1- ad 3-floris, 3 ad 4 mm longis.

A parasitic shrub, the branches up to 60 cm in length, terete, glabrous, dark colored when dry, with scattered minute lenticels, the branchlets densely ferruginous-puberulent. Leaves opposite, subopposite, and alternate, oblong, coriaceous, 6 to 8 cm long, 2 to 3.5 cm wide, obtuse, base obtuse to rounded, the upper surface glabrous, olivaceous, shining, the lower densely ferruginous-puberulent or tomentose; lateral nerves 4 to 6 on each side of the midrib, rather distinct on the upper surface, the reticulations very lax, on the lower surface obscure or even obsolete; petiole 4 to 10 mm long, densely ferruginous-puberulent. Flowers axillary, fasciated, 4-merous, curved, about 2.5 cm long, densely ferruginous-pubescent or tomentose, the peduncles 1- or 2-flowered, 3 to 4 mm long, when 2-flowered the pedicels about 1 mm in length. Calyx oblong-ovoid, about 3 mm long, truncate, densely ferruginous-tomentose, subtended by a small, ovate bract. Corolla in bud curved, about 2.2 cm long, in anthesis split down one side, externally densely ferruginous-tomentose, the tube about 1.6 cm long; lobes reflexed, about 6 mm long, somewhat spatulate. Anthers continuous with the filaments, about 2 mm long.

Kwangtung Province, Lin District, Lo Chi Chui, *Levine 3321*, October 14, 1918, on trees along the river.

This species belongs in the group with *Loranthus parasiticus* Merr. and is perhaps most closely allied to *Loranthus yadoriki*

Siebold. It may be the Kwangtung species recorded by Dunn & Tutcher as *Loranthus scurrula* Linn., but is certainly not the Linnean species.

ELYTRANTHE Blume

ELYTRANTHE FORDII (Hance) comb. nov.

Loranthus fordii Hance in Journ. Bot. 23 (1885) 38.

This species is apparently common in Kwangtung Province and is clearly an *Elytranthe*. It is represented by the following specimens: White Cloud hills, *Levine 2076*; Ting Woo Monastery, *Levine 2025*; Honam Island, *Levine 1006*, and North River, Tseng Uen, *Levine 2390*. The specimens have the following local names: *shui chi kei shaang*, *koh muk kei shang*, and *wo ko*.

VISCUM Linnaeus

VISCUM STIPITATUM Lecomte in Sargent Pl. Wils. 3 (1916) 319.

Kwangtung Province, Lin District, Leung Kong Ngon, *Levine 3465*, October 28, 1918.

Lecomte's species was based on material from Yunnan Province, and Levine's excellent specimen exactly matches the description. In leaf characters the species is distinctly similar to *Ginalloa*.

VISCUM ANGULATUM Heyne ex DC. Prodr. 4 (1830) 225; Hook. f. Fl. Brit. Ind. 5 (1886) 225.

Kwangtung Province, Poon Yue District, *Levine 3165*, November, 1918, with the local name *kei shang*.

This species has not previously been recorded from China. The specimen is in fruit but agrees closely with Indian material representing Heyne's species. India to Australia.

RANUNCULACEAE

RANUNCULUS Linnaeus

RANUNCULUS DIFFUSUS DC. Prodr. 1 (1824) 38.

Kwangtung Province, Shiuchow region, Tan Ha Shan, *To Kang P'eng 2901*, April, 1919, in grassy places.

India to China, Java, and Sumatra; not previously recorded from Kwangtung Province.

BERBERIDACEAE

NANDINA Thunberg

NANDINA DOMESTICA Thunb. Fl. Jap. (1784) 9.

Kwangtung Province, Shiuchow region, Fan Kwai No Shan, *To Kang P'eng 2778*, April 19, 1919, in forests.

Widely distributed in Japan and China, but not previously found so far south as Kwangtung Province.

MENISPERMACEAE

DIPLOCLISIA Miers

676

DIPLOCLISIA CHINENSIS sp. nov.

Frutex scandens, glaber; foliis late ovatis ad subreniformibus, 5 ad 10 cm longis, 7 ad 12 cm latis, apice acutis, basi 5-nerviis, late truncato-rotundatis ad leviter cordatis, petiolo 4 ad 7 cm longo; inflorescentiis axillaribus, pedunculatis, umbellato-cymosis, 1.5 ad 3 cm longis; floribus ♂ 6-meris, sepalis ellipticis ad obovatis, circiter 2.5 mm longis, lineolatis, petalis rhomboideis 1.5 mm longis, apice rotundatis, basi cuneatis, auriculis laterali-bus acutis, inflexis.

Scandent, glabrous, the branches and branchlets usually reddish brown, terete. Leaves chartaceous, olivaceous on both surfaces or somewhat glaucous beneath, broadly ovate to subreniform, 5 to 10 cm long, 7 to 12 cm wide, entire or the margin obscurely undulate, apex acute, base broadly truncate-rounded to shallowly cordate, 5-nerved; petioles 4 to 7 cm long. Inflorescences axillary, solitary, umbellate-cymose, the peduncles 1 to 2 cm long, the flower-bearing portion less than 1 cm in diameter, the pedicels 2 to 4 mm long, lineolate. Petals 6, rhomboid, 1.5 mm long, apex rounded, base acute, the auricles lateral, acute, inflexed; filaments 2 mm long.

Kwangtung Province, Shiuchow region, Fan Kwai No Shan, To Kang P'eng 2764 (type), 2779 p. p., April 19, 1919.

This species is closely allied to *Diploclisia affinis* (Oliv.) Diels but differs in its larger leaves which are broadly ovate to subreniform, their bases truncate-rounded to shallowly cordate and not at all peltate. My specimen of No. 2779 cited above consists in part of this species and in part of *Pericampylus glaucus* (Lam.) Merr.

LAURACEAE

LITSEA Lamarek

LITSEA CUBEBA (Lour.) Pers. Syn. 2 (1807) 4.

Laurus cubeba Lour. Fl. Cochinch. (1790) 252.

Litsea piperita Juss. in Ann. Mus. Paris 6 (1805) 213.

Persea cubeba Spreng. Syst. 2 (1825) 269.

Daphnidium cubeba Nees Syst. Lour. (1836) 615.

Tetranthera cubeba Meisn. in DC. Prodr. 15¹ (1864) 199.

Litsea citrata Blume Bijdr. (1825) 595; Lecomte Fl. Gén. Indo-Chine 5 (1914) 138; Gamble in Journ. As. Soc. Beng. 75¹ (1912) 146.

Tetranthera citrata Nees Syst. Lour. (1836) 560.

Tetranthera polyantha Wall. Cat. (1830) No. 2538, *nomen nudum*, Nees in Wall. Pl. As. Rar. 2 (1831) 67, Syst. Lour. (1836) 545.

Tetranthera floribunda Champ. in Hook. Kew Journ. Bot. 5 (1853)

Loureiro's material was from Cochin China, but his species and the numerous synonyms based upon it have never been satisfactorily placed and it is not mentioned by Lecomte in his recent treatment of the Lauraceae of Indo China.⁶ Hemsley⁷ states that he had seen only the fruit as it appears in commerce. It is evident from Loureiro's other descriptions of species of *Laurus* that the statement that the leaves of *Laurus cubeba* were nerveless was intended by him to imply that there were no longitudinal nerves as in *Cinnamomum*, for he placed all the species of *Cinnamomum* known to him under *Laurus*. The fruits are black, about the size, shape, and color of the fruits of black pepper, as Loureiro notes, and like the leaves are very aromatic. The species extends from Central China to India southward to Java, and it is manifest that Loureiro's specific name should be adopted for the species currently known as *Litsea citrata* Blume. I have examined the following material:

China, Kwangtung Province, Merrill 10960, Levine & Groff 158, Levine 1398, 3063, 3248, with the local name *tan shi keung*, To Kang P'eng 2658, with the local name *ts'ing tsz muk*: India, Meebold 5532, Craib 255: Indo China, Bon 4278: Malay Peninsula, Perak, Scortechini 270b, Haniff & McNur 2323: Java, Koordeers 3173, 25602, 27798, 32911, 38125, Winckel 256.

MACHILUS Nees

6239 MACHILUS LEVINEI sp. nov.

Arbor parva, glaberrima; foliis oblongis, crasse coriaceis, usque ad 18 cm longis, acuminatis, subtus glaucescentibus, nervis utrinque 15 ad 18, subtus distinctis; inflorescentiis terminalibus, ramis umbellato-fasciculatis, 2 ad 3.5 cm longis; perianthii segmentis anguste oblongis, coriaceis, glabris, circiter 10 mm longis.

A small, entirely glabrous tree, the branches and branchlets reddish brown, wrinkled when dry, not lenticellate. Leaves thickly coriaceous, oblong, 12 to 18 cm long, 3 to 4.5 cm wide, base obtuse to acute, apex shortly acuminate, the upper surface smooth, shining, rather pale when dry, the lower glaucous, the midrib impressed on the upper surface, very prominent and reddish brown on the lower; lateral nerves 15 to 18 on each side of the midrib, slender, distinct beneath, curved-ascending at an angle of about 45 degrees; petioles reddish brown, about 2.5 cm long. Inflorescences terminal, the primary branches about 8, reddish brown, umbellate-fascicled, 2 to 3.5 cm long, few-flowered. Perianth segments oblong or narrowly oblong, acute to obtuse,

⁶ Fl. Gén. Indo-Chine 5 (1914) 107-158.

⁷ Journ. Linn. Soc. Bot. 26 (1891) 380.

coriaceous, about 10 mm long and 3 mm wide, glabrous. Ovary glabrous. Immature fruit globose.

Kwangtung Province, Teng Woo Mountain, *Levine 2024*, May 26, 1918, scattered on slopes, altitude about 300 meters.

This species is well characterized by its oblong, thickly coriaceous, rather numerous nerved leaves which are glaucous beneath, and by its long, coriaceous, glabrous perianth segments. It is apparently as closely allied to *Machilus phoenicis* Dunn as to any other species, which, however, has smaller, differently shaped, fewer-nerved leaves and much shorter petioles.

LINDERA Thunberg

2034

LINDERA SUBCAUDATA (Merr.) comb. nov.

Neolitsea subcaudata Merr. in Philip. Journ. Sci. 13 (1918) Bot. 137.

Additional material with staminate flowers representing this species shows it to be a *Lindera*, allied to *L. strychnifolia* (Meisn.) F.-Vill. It is now represented by *Merrill 11016*, *Levine 1351*, *Groff 2463*, *To Kang P'eng 2707*, the latter with staminate flowers bearing the local name *heung kau shü*.

SAXIFRAGACEAE

ANDROSACE Linnaeus

520

ANDROSACE UMBELLATA (Lour.) comb. nov.

Drosera umbellata Lour. Fl. Cochinch. (1790) 186.

Androsace saxifragifolia Bunge in Mém. Acad. St. Pétersb. 2 (1836) 127; Pax & Knuth in Engl. Pflanzenreich 22 (1905) 179.

Loureiro cites both Chinese and Cochinchinese names for this species, although he also states "Habitat in China." It would seem that he observed the species in both regions. The species extends from India to Japan southward to Indo-China and northern Luzon and occurs at low altitudes both in Kwangtung Province, China, and in Indo China. The species is clearly no *Drosera*, but among all the species of plants known from southern China, Loureiro's description applies only to *Androsace saxifragifolia* Bunge. There is, hence, no reason why Loureiro's specific name should not be adopted for this well-known species. Planchon⁸ has already indicated that Loureiro's species might be an *Androsace*.

ROSACEAE

PYGEUM Gaertner

6013

PYGEUM TOPENGII sp. nov. § *Sericophyllum*.

Arbor circiter 12 m alta, ramis glabris, ramulis ferrugineo-pubescentibus; foliis coriaceis, elliptico-ovatis, usque ad 9 cm

⁸ Ann. Sci. Nat. III 9 (1848) 304.

longis, breviter obtuse acuminatis, basi plerumque acutis, leviter inaequilateralibus, haud vel obscurissime glandulosis, supra in siccitate pallidis, nitidis, glabris, subtus ad costa nervisque leviter ciliatis, nervis utrinque 6 vel 7, subtus perspicuis; infructescentiis axillaribus, solitariis, depauperato-paniculatis, 4 ad 5 cm longis; fructibus subreniformibus, glabris, minute apiculatis, circiter 8 mm longis, 10 ad 12 mm latis; seminibus solitariis, testa extus sericeis.

A tree about 12 m high, the branches dark reddish brown, lenticellate, glabrous, the branchlets ferruginous-pubescent as are the petioles and apparently the inflorescences. Leaves coriaceous, elliptic-ovate, 6 to 9 cm long, 3 to 5 cm wide, shortly and rather bluntly acuminate, base acute, usually somewhat inequilateral, eglandular or the glands obscure and not at all projecting, the upper surface, except in very young leaves, glabrous, pale and shining when dry, the lower somewhat ciliate on the midrib and nerves; lateral nerves 6 or 7 on each side of the midrib, prominent; petioles 5 to 7 mm long; stipules oblong, pubescent, deciduous, about 5 mm long. Infructescences axillary, solitary, from the branchlets below the leaves, 4 to 5 cm long, sparingly pubescent, usually with a single basal branch 1 to 2 cm in length. Fruits subreniform, brown when dry, slightly apiculate, glabrous, about 8 mm long, 10 to 12 mm wide, their pedicels 3 mm long or less. Seeds solitary, the testa distinctly silky-villous.

Kwangtung Province, Kochow region, Shek Kau Tong, *To Kang P'eng* 2750, March 5, 1919.

Pygeum henryi Dunn is the only species of the genus definitely known from China, but the present one is entirely different. *Pygeum latifolium* Miq. is recorded from Hongkong by Hemsley but Miquel's species is definitely known only from Java, having long been confused with a Philippine species. It is possible that the present species is identical with the Chinese form previously referred to *Pygeum latifolium* Miq., but it is safely not Miquel's species.

SANGUISORBA Ruppis

SANGUISORBA OFFICINALIS Linn. Sp. Pl. (1753) 116.

Kwangtung Province, Lin District, Shan Mo Ling and Sing Tize Foo, *Levine* 3181, 3191, September 15, 1918, with the local name *mar lin on*.

The genus is new to Kwangtung Province. There seems to be some difference of opinion among botanists as to the distribution of Chinese forms of this genus between *Sanguisorba offi-*

cinensis Linn. and *S. canadensis* Linn., the present material matching specimens from various parts of China, some identified as *S. officinalis* Linn. and some as *S. canadensis* Linn. The Kwangtung material closely matches European material of *S. officinalis* Linn., and I assume this name to be correct for it. *Sanguisorba formosana* Hayata, as represented by Formosan material, *Kawakami 93*, is scarcely to be distinguished.

POTENTILLA Linnaeus

POTENTILLA DISCOLOR Bunge Enum. Pl. Chin. Bor. (1831) 25.

Kwangtung Province, Shiuchow region, *To Kang P'eng 2775*, April 19, 1919.

Widely distributed in northern and central China, extending to Formosa (a variety); not previously recorded from Kwangtung Province.

LEGUMINOSAE

PITHECOLOBIUM Martius

57294

PITHECOLOBIUM TURGIDUM sp. nov.

Arbor parva, partibus junioribus ferrugineo-pubescentibus; foliis bipinnatis, pinnis 1-jugis, foliolis amplis, bijugis, membranaceis vel chartaceis, glabris, nitidis, acuminatis, majoribus usque ad 15 cm longis, oblongo-ovatis, basi acutis, nervis utrinque 6 ad 8, perspicuis; leguminis turgidis, rectis, dehiscentibus, oblongis, 7 ad 9 cm longis circiter 3 cm latis, et 1 ad 1.5 cm crassis, valvis coriaceis; seminibus ellipsoideis, 1.8 ad 2.5 cm longis, haud compressis.

A small tree, 3 to 4 m high *vide* Levine, glabrous except the younger parts which are ferruginous- or castaneous-pubescent. Leaves bipinnate, pinnae 1-jugate, leaflets bijugate, the petiole 2 to 6 cm long, with a single large gland at the apex below the insertion of the single pair of terminal pinnae, the rachises of the pinnae 5 to 8 cm long, each bearing four large leaflets and usually with a terminal gland; leaflets membranaceous to chartaceous, oblong-ovate to elliptic-ovate, pale greenish and shining when dry, glabrous, base acute, equilateral, the apex acuminate, 9 to 15 cm long, 4 to 7 cm wide, the lateral nerves 6 to 8 on each side of the midrib prominent. Panicles pyramidal, in bud up to 14 cm long, the flowers in globose heads at the tips of the branchlets, pubescent. Pods oblong, turgid, dehiscent, 7 to 9 cm long, about 3 cm wide, 1 to 1.5 cm thick, each usually with about four seeds, the sutures not thickened, the valves coriaceous, continuous, brown, smooth. Seeds contiguous, ellipsoid,

not compressed, brown, smooth, shining, 1.8 to 2.5 cm long, persistent for a considerable period after the pod dehisces by the elongated, slender, more or less curved funiculus, the latter about 1 cm in length.

Kwangtung Province, Teng Woo Mountain, *Levine & Groff* 86, November 18, 1916, with mature fruits, *Levine* 1976, April 26, 1918, from the same tree, with immature buds and fully mature seeds; along streams, altitude about 300 meters.

This species, distributed as an *Albizzia*, like its congener, *Pithecolobium balansae* Oliv., and apparently *P. attopenense* Pierre (of which the fruits are unknown), is anomalous in *Pithecolobium* in its straight, turgid, not at all twisted or curved pods, and is equally anomalous in *Albizzia*. It is suspected that it may prove to represent a distinct generic type.

PAHUDIA Miquel

PAHUDIA XYLOCARPA Kurz Forest Fl. Brit. Burma 1 (1877) 413.

Kwangtung Province, Kochow region, Sai Ngon, *To Kang P'eng* 2705, February 18, 1919, a single tree, said to have been grown from seeds secured in Burma. It is locally known as *min ke*.

The specimen, which presents a mature pod and seeds, agrees closely with Kurz's description, the species having been based on material originating near the Burmese border of Siam.

CASSIA Linnaeus

CASSIA FISTULA Linn. Sp. Pl. (1753) 377.

Kwangtung Province, Tak Hing, *Levine* 3587, April, 1919, from an introduced and cultivated tree. A native of tropical Asia, pantropic in cultivation.

ORMOSIA Jackson

ORMOSIA HAINANENSIS Gagnep. in Not. Syst. 3 (1914) 31.

Hainan, *Hongkong herbarium* 443! *Miss Moninger* 122!, in fruit: Kwangtung Province, Kochow region, Shek Kau T'ong, *To Kang P'eng* 2664, March 3, 1919, in forests.

The pods, description from Miss Moninger's Hainan specimen, contain from 1 to 4 seeds, and when more than 1-seeded are somewhat torulose. They are 2 to 4 cm long and 1 to 1.5 cm wide, much thickened, glabrous, brown when dry, the valves thickened, somewhat woody, irregularly twisted after dehiscence. Seeds red, dangling from the pod after dehiscence, not arillate, 15 to 18 mm long. When but 1-seeded the pods are usually con-

spicuously stipitate, but the pseudostalk presents several undeveloped ovules. The species seems to be allied to *Ormosia fordiana* Oliv.⁹

PTEROLOBIUM R. Brown

PTEROLOBIUM ROSTHORNII Harms in Engl. Bot. Jahrb. 29 (1900) 410.

Kwangtung Province, Lin District, Pak hill, *Levine 3208*, October 21, 1918, with the local name *ye tau*.

This is the second species of the genus to be found in Kwangtung Province. The material agrees very closely with the original description, which, however, is rather short and imperfect. It has not otherwise been reported except by the original collections in southern Szechuen. The Kwangtung material is in fruit, the wings being 1.2 to 1.5 cm wide, brown and shining when dry, and apiculate-acuminate by the nearly straight upper suture which is slightly produced at the tip.

DERRIS Loureiro

DERRIS ELEGANS (Grah.) Benth. in Miq. Pl. Jungh. (1852) 252, Journ. Linn. Soc. Bot. 4 (1860) Suppl. 109; Baker in Hook. f. Fl. Brit. Ind. 2 (1878) 252.

Pongamia elegans Grah. in Wall. Cat. (1832) No. 7540, *nomen nudum*.

Kwangtung Province, Shai Chiu Mountain, *Levine 2074*, May 4, 1918, with the local name *kau ngar fa*.

This species has not previously been reported from China, but the flowering specimen cited above is an excellent match for our large series of Philippine specimens representing it; fruiting specimens of the Chinese form are desirable to verify the correctness of the determination.

Tenasserim, Andaman Islands, Malay Peninsula, Sumatra, and the Philippines.

DERRIS TRIFOLIATA Lour. Fl. Cochinch. (1790) 433.

The genus *Derris* was based by Loureiro on two species. The first, *D. pinnata*, the type of which is preserved in the herbarium of the British Museum, is *Dalbergia pinnata* (Lour.) Prain, a species of wide distribution in the Indo-Malayan region more commonly known as *Dalbergia tamarindifolia* Roxb. The second species described by Loureiro, *D. trifoliata*, was based on specimens from the vicinity of Canton, and the type is preserved in the herbarium of the Paris Museum of Natural History. I am of the opinion that this species should be interpreted as the type of the genus *Derris*. The species by many authors has been reduced to *Derris uliginosa* (Roxb.) Benth., and a recent critical

⁹ In Hook. Ic. IV 5 (1895) t. 2422.

examination of the type by Doctor Gagnepain shows that it is identical with Roxburgh's species. Prain¹⁰ thought that Loureiro's description did not apply sufficiently closely to *Derris uliginosa* to warrant reducing Loureiro's species to the latter. The examination of the type by Doctor Gagnepain, however, definitely settles this matter; and Loureiro's name, being the older, should be retained for this very common, characteristic, and widely distributed species. It occurs typically along the margins of tidal streams more or less subject to the influence of brackish or salt water, from tropical East Africa through India to southern China and Formosa, southward through Malaya to tropical Australia and Polynesia.

DUNBARIA Wight and Arnott

DUNBARIA ROTUNDIFOLIA (Lour.) comb. nov.

Indigofera rotundifolia Lour. Fl. Cochinch. (1790) 458.

Dolichos conspersus Grah. in Wall. Cat. (1831-32) No. 3342, *nomen nudum*.

Dunbaria conspersa Benth. in Miq. Pl. Jungh. (1852) 242.

Dunbaria punctata Benth. l. c.

Dolichos punctatus Wight & Arn. Prodr. (1834) 237.

Loureiro's type was from the vicinity of Canton, and his description applies closely to the species currently known as *Dunbaria conspersa* Benth. except that the pods have more than two seeds. No other leguminous species known from Kwangtung agrees at all with Loureiro's description. I have examined the following Kwangtung specimens: *Merrill 10146*, *Levine 1111*, *3345*. Loureiro records the Cantonese name as *o tam sin*; that recorded on one of Levine's specimens is *chin tang*, not very different from Loureiro's name if the words be reversed.

MUCUNA Adanson

MUCUNA COCHINCHINENSIS (Lour.) A. Chev. in Bull. Agr. Inst. Sci. Saigon 1 (1919) 91.

Marcanthus cochinchinensis Lour. Fl. Cochinch. (1790) 461.

Carpopogon niveum Roxb. Fl. Ind. ed. 2, 3 (1832) 385.

Mucuna nivea Wight & Arn. Prodr. (1834) 255.

Stizolobium niveum O. Kuntze Rev. Gen. Pl. (1891) 207.

Kwangtung Province, Lin District, *Levine 3283*, with the local name *kau chau tau t'ang*.

Loureiro's material was from Cochin China, undoubtedly from the vicinity of Hue where he resided most of the time while

¹⁰ Journ. As. Soc. Beng. 66² (1898) 458.

in Cochin China. His description applies unmistakably to the widely distributed and cultivated species currently known as *Mucuna nivea* Wight & Arn., and his specific name will replace that based on Roxburgh's binomial. Loureiro's description of the pods was apparently based on fresh rather than on dried material. Loureiro resided at Hue, and a mature pod secured from this locality under the local name cited by Loureiro, submitted to me by Dr. A. Chevalier, is identical with *Mucuna nivea* Wight & Arn. Prof. C. V. Piper informs me that he examined Loureiro's type in the herbarium of the British Museum in 1912, a leaf specimen only, making the note at that time that it might be any of the species allied to *Mucuna nivea*, but that it probably represented the latter species.

POLYGALACEAE

POLYGALA Linnaeus

POLYGALA TENUIFOLIA Willd. Sp. Pl. 3 (1800) 879.

Kwangtung Province, Shiuchow region, *To Kang P'eng* 2809, 2770, 2903, in thickets and forests.

In China previously recorded from Chihli, Shingking, and Shantung, but not previously reported from southern China. The specimens cited above agree closely with material from Chihli, differing chiefly in some of the leaves being broader than in the northern form.

EUPHORBIACEAE

EUPHORBIA Linnaeus

EUPHORBIA ESULA Linn. Sp. Pl. (1753) 461; Boiss. in DC. Prodr. 15² (1862) 160; Forbes & Hemsl. in Journ. Linn. Soc. Bot. 26 (1894) 412.

Kwangtung Province, North River, Fu Ok, *Groff* 2279, March, 1918.

Widely distributed in Asia, but not previously reported from southern China.

EXCOECARIA Linnaeus

EXCOECARIA COCHINCHINENSIS Lour. Fl. Cochinch. (1790) 612; Muell.-Arg. in DC. Prodr. 15² (1866) 1215.

Kwangtung Province, cultivated at the Canton Christian College, *Groff* 2963. This is the typical form with red leaves, cultivated for ornamental purposes; namely, typical *Excoecaria bicolor* Hassk.

EXCOECARIA COCHINCHINENSIS Lour. Fl. Cochinch. (1790) 612, var. VIRIDIS (Pax & K. Hoffm.).

Excoecaria bicolor Hassk. Retzia 1 (1855) 158, var. *viridis* Pax & K. Hoffm. in Engl. Pflanzenreich 52 (1912) 159.

Kwangtung Province, Kochow region, Kwong T'am, *To Kang P'eng*, 2672, March 22, 1919.

I believe the cultivated form with colored leaves described by Loureiro as *Excoecaria cochinchinensis* to be identical with *Excoecaria bicolor* Hassk., which being the case Loureiro's name should be retained. The type of *Excoecaria bicolor* Hassk. var. *viridis* Pax & K. Hoffm. was from Cochin China, and the description agrees entirely with the specimen cited above. The species is new to China.

ALCHORNEA Swartz

ALCHORNEA RUGOSA (Lour.) Muell.-Arg. in Linnaea 34 (1865) 170.

Alchornea hainanensis Pax & K. Hoffm. in Engl. Pflanzenreich 63 (1914) 242!

Cladodes rugosa Lour. Fl. Cochinch. (1790) 574.

Kwangtung Province, Kochow region, Kwanshan temple, *To Kang P'eng* 2662, March 18, 1919.

This is the first record of the species from China proper, although it had previously been recorded from Hainan Island. Unless *Alchornea rugosa* (Lour.) Muell.-Arg. is variable in the number of its stamens, it would seem that Pax and Hoffmann are wrong in their interpretation of *Alchornea rugosa*, and that they described as a new species the typical form as described by Loureiro under *Cladodes rugosa*. Loureiro describes his species as having eight stamens, the only character depended upon by Pax and Hoffmann in separating the Hainan form from *Alchornea rugosa*. In *Alchornea hainanensis* the staminate flowers have eight stamens, as does the Kwangtung specimen cited above, thus agreeing with Loureiro's original description of *Cladodes rugosa*. J. J. Smith states that in all staminate flowers of the Javan form referred by him to *Alchornea rugosa* the number of stamens was four; Pax and Hoffmann state stamens 4, rarely 5 or 6. The actual specimens so closely resemble each other that I strongly suspect that the species has a variable number of stamens, 4 to 8. Should this not prove to be the case, then Loureiro's specific name will have to be retained for the form characterized by Pax and Hoffmann as *Alchornea hainanensis*, while for the common Malayan form the name *Alchornea javanensis* (Blume) Muell.-Arg. will have

to be revived, or the still earlier one, *Croton apetalum* Blume, transferred to *Alchornea*. It is to be noted that Pax and Hoffmann saw no Cochin China material representing Loureiro's species.

ANACARDIACEAE

POUPARTIA Commerson

1163 POUPARTIA CHINENSIS sp. nov.

Arbor circiter 8 m alta, inflorescentiis exceptis glabra; foliis 20 ad 30 cm longis, foliolis 11 ad 15, membranaceis ad chartaceis, oblongo-lanceolatis, 6 ad 9 cm longis, acuminatis, leviter inaequilateralibus, glabris vel junioribus subtus in axillis leviter barbatis, nervis utrinque 9 ad 12; petiolulis circiter 2 mm longis; inflorescentiis terminalis, amplis, circiter 30 cm longis, ramis inferioribus usque ad 15 cm longis, cinereo-pubescentibus; floribus ♂ 5-meris, calyces circiter 1.5 mm diametro; petalis oblongis, 2.5 mm longis, reflexis; staminibus 10, filamentis 2 ad 2.3 mm longis; ovario glabro, 4- ad 5-locellato.

A tree about 8 m high, the inflorescences more or less cinereous-pubescent. Ultimate branches about 5 mm in diameter, smooth, glabrous, terete. Leaves 20 to 30 cm long, the rachis sparingly pubescent; leaflets 11 to 15, membranaceous to chartaceous, oblong-lanceolate, 6 to 9 cm long, 1.5 to 2.5 cm wide, somewhat inequilateral at the base, apex acuminate, glabrous, or the younger ones sparingly bearded in the axils on the lower surface; lateral nerves 9 to 12 on each side of the midrib, slender; petiolules about 2 mm long. Inflorescence a terminal leafy panicle about 30 cm in length, the lower branches up to 15 cm long, subtended by normal but usually reduced leaves, the upper 15 to 20 cm of the panicle leafless; the branches, branchlets, and pedicels cinereous-pubescent. Flowers numerous, white, pistillate and staminate ones in the same inflorescences. Calyx of the staminate flowers about 1.5 mm in diameter, the lobes 5, ovate, acute or obtuse, about 0.5 mm long. Petals oblong, 2.5 mm long, their margins somewhat inflexed, reflexed in anthesis, nerveless. Stamens 10, their filaments filiform, 2 to 2.3 mm long. Pistillate flowers similar to the staminate ones. Ovary glabrous, 4- or 5-celled; styles 4 or 5, about 1 mm long.

Kwangtung Province, Honam Island, on the campus of Canton Christian College, *Levine 3521*, May 13, 1919.

This is the second species of the genus to be found in China, differing radically from *Poupartia fordii* Hemsl. in its very much larger, terminal, distinctly pubescent inflorescences, the

staminate and pistillate flowers borne in the same inflorescences; much smaller pistillate flowers; much more numerous leaflets; and shorter petiolules.

CELASTRACEAE

CELASTRUS Linnaeus

CELASTRUS HOOKERI Prain in Journ. As. Soc. Beng. 72² (1904) 197; Rehd. & Wils. in Sargent Pl. Wils. 2 (1915) 352.

Kwangtung Province, North River and Shiuchow regions, *Groff 2300, 2294, To Kang P'eng 2875.*

India; previously recorded from China from Yunnan, Szech'uan, and Fokien, but not before reported from Kwangtung Province.

SAPINDACEAE

KOELREUTERIA Lakman

KOELREUTERIA BIPINNATA Franch. in Bull. Soc. Bot. France 33 (1886) 463, Pl. Delavay. (1889) 143, t. 29, 30.

Kwangtung Province, Ying Tak District, *Levine 3484*, December 9, 1918.

This species is new to Kwangtung Province and this record represents a considerable southward extension of range for it. The specimen is in fruit and agrees closely with our rather full series of specimens from Yunnan Province.

ELAEOCARPACEAE

ELAEOCARPUS Linnaeus

ELAEOCARPUS DUBIUS A. DC. in Bull. Herb. Boiss. II 2 (1903) 366; Gagnep. in Lecomte Fl. Gén. Indo-Chine 1 (1910) 572.

Kwangtung Province, Kochow region, Shek Kau Tong, *To Kang P'eng 2686*, March 5, 1919, in forests.

The specimen agrees in all respects with the descriptions of this species and with *Bon 4298!*, *2671!* from Tonkin. Previously known only from Tonkin.

MALVACEAE

HIBISCUS Linnaeus

HIBISCUS SURATTENSIS Linn. Sp. Pl. (1753) 696.

Kwangtung Province, Kochow region, Fat Tsz Ling, *To Kang P'eng 2730*, February, 1919, along roadsides.

This widely distributed Indo-Malayan species has been recorded from Hainan, but I can find no record for it from China proper.

THEACEAE

EURYA Thunberg

572 EURYA GROFFII sp. nov.

Frutex vel arbor parva; ramis teretibus, glabris, ramulis pilosis; foliis lanceolatis, chartaceis vel subcoriaceis, usque ad 6 cm longis et 1.2 cm latis, nitidis, supra glabris, subtus pilosis, apice tenuiter acuminatis, basi obtusis, plerumque leviter inaequilateralibus, costa supra impressa, subtus cum venis prominulis; fructibus axillaribus, fasciculatis, globosis vel ovoideis, glabris, stylis connatis; sepalis elliptico-ovatis, exterioribus leviter pilosis, coriaceis, 1.5 ad 2 mm longis.

A shrub or a small tree, the branchlets rather densely pilose. Branches terete, glabrous, dark reddish brown. Leaves numerous, lanceolate, chartaceous to subcoriaceous, greenish olivaceous and shining when dry, 3.5 to 6 cm long, 8 to 12 mm wide, the margins denticulate, the upper surface glabrous, the lower pilose, the midrib above impressed, prominent beneath, the lateral nerves obsolete or subobsolete on the upper surface, distinct and somewhat projecting on the lower surface, the apex slenderly acuminate, the base obtuse and often minutely inequilaterally cordate, sessile or subsessile. Fruits axillary, glabrous, globose or ovoid, 3 to 3.5 mm in diameter, smooth, their pedicels 1 to 1.5 mm long; styles united for the lower 1 mm, the arms about 1 mm long. Sepals coriaceous, elliptic-ovate, 1.5 to 2 mm long, rounded, the outer ones somewhat pilose.

Kwangtung Province, Tiu Kaan Shan, Tseng Uen, *Groff 2378*, March, 1918, on mountain sides.

In vegetative characters and general appearance this species strongly resembles *Eurya swinglei* Merr., but differs radically in its entirely glabrous fruits and much shorter styles. From *Eurya distichophylla* Hemsl. it is readily distinguished by its slenderly acuminate leaves and the veins obsolete or nearly so on the upper surface and projecting on the lower surface. The fruits and staminate flowers of Hemsley's species are as yet unknown.

FLACOURTIACEAE

XYLOSMA Forster f.

1257 XYLOSMA CONGESTUM (Lour.) comb. nov.

- Croton congestum* Lour. Fl. Cochinch. (1790) 582, excl. descr. fruct.
Xylosma racemosum Miq. Ann. Mus. Bot. Lugd.-Bat. 2 (1865-66) 155.
Hisingera racemosa Sieb. & Zucc. Fl. Jap. Fam. Nat. 1 (1843) 169.
Xylosma japonicum A. Gray in Mem. Amer. Acad. II 6¹ (1863) 381.
Flacourtia chinensis Clos. in Ann. Sci. Nat. Bot. IV 8 (1857) 219.

This species is very common in thickets in the vicinity of Canton, Loureiro's type having been from Canton. J. Mueller¹¹ notes that Loureiro's description of the flowers and of the inflorescences does not conform to *Croton*; further it does not conform with the characters of any euphorbiaceous plant known from Kwangtung Province, but, with the exception of the fruit description, agrees entirely with the species currently known as *Xylosma racemosum* Miq. It is clear that Loureiro either added the fruit description to make his species agree with the generic characters of *Croton*, or described the fruits from material originating from a species entirely unrelated to the flowering specimen described by him. I have examined the following specimens from Kwangtung Province, mostly from the immediate vicinity of Canton: Merrill 9850, 9993, Groff 2252, 2353, Levine 18, 171, 172, 177, 279, 365, 366, 371, 1749, 1809, 1829, 2084, 3261, 3341, To Kang P'eng 2727, 2737. The local names recorded are *wu ying shue* (vicinity of Canton), *ch'ui tung ts'ai* (North River region), and *chü nga lak shü* (Kochow region). The name *pa tau* recorded by Loureiro should probably be excluded as it is the same as the name recorded by him for *Croton tiglium* Linn.

THYMELAEACEAE

AQUILARIA Lamarck

618 AQUILARIA SINENSIS (Lour.) comb. nov.

Ophiospermum sinense Lour. Fl. Cochinch. (1790) 281.

Aquilaria chinensis Spreng. Syst. 2 (1825) 356.

Aquilaria grandiflora Benth. Fl. Hongk. (1861) 297.

Loureiro cites no definite locality, but from the fact that he indicated the local name *pa mou yong* as Chinese it is clear that his material was from China, and in all probability from the vicinity of Canton. The description definitely applies to the species commonly known as *Aquilaria grandiflora* Benth., one that is not uncommon in the vicinity of Canton. Loureiro's description of the perianth as 6-merous was apparently due to an error on his part, for he enumerates the stamens as five, thus indicating that he was describing a 5-merous flower. I have examined the following Kwangtung material: Groff 2487, Merrill 10962, Levine 996, 1400, 2070, from Tsangsheng, Wa Shau Toi, White Cloud Mountain, and Honam Island, the last two localities being in the immediate vicinity of Canton. Loureiro's

¹¹ DC. Prodr. 15² (1866) 696.

type is preserved in the herbarium of the Paris Museum and is identical with the species as here interpreted.

RHIZOPHORACEAE

CARALLIA Roxburgh

²⁰⁹ CARALLIA BRACHIATA (Lour.) comb. nov.

Diatoma brachiata Lour. Fl. Cochinch. (1790) 296. ²¹⁰

Carallia lucida Roxb. Hort. Beng. (1814) 92, *nomen nudum*, Pl. Coromandel 3 (1819) 8, t. 211.

Carallia integerrima DC. Prodr. 3 (1828) 33.

Petalotoma brachiata DC. op. cit. 295.

Kwangtung Province, White Cloud Mountain, near Canton, *Levine 3386*, local name *nik nga tsai*; Poon Yue District, *Levine 3138*; Kochow region, *To Kang P'eng 2676, 2751*, with the local name *ngo shen muk*.

Loureiro's generic name has priority over *Carallia*, but the latter is retained in the list of *nomina conservanda* adopted by the Vienna Botanical Congress. *Petalotoma* DC. is merely a new generic name for *Diatoma*. I believe Loureiro's description applies to the common and widely distributed Indo-Malayan species commonly known as *Carallia lucida* Roxb. and as *C. integerrima* DC., the last two certainly being conspecific.

MYRTACEAE

EUGENIA Linnaeus

EUGENIA BULLOCKII Hance in Journ. Bot. 16 (1878) 227.

Kwangtung Province, Kochow region, Shek Tan Kong, *To Kang P'eng 2995*, March, 1919.

This specimen, although in fruit, agrees closely with the original description and with Hainan material collected by Miss Moninger, which I have identified with Hance's species. It was previously known only from Hainan.

ARALIACEAE

ARALIA Linnaeus

¹²⁸² ARALIA SPINIFOLIA sp. nov. § *Arborescentes*.

Frutex erectus, circiter 3 m altus, foliis inflorescentiisque perspicue spinosis atque setosis; foliis magnis, bipinnatis, pinnis circiter 30 cm longis, 5- ad 9-foliolatis; foliolis oblongo-ovatis, usque ad 12 cm longis, membranaceis, acuminatis, brevissime petiolulatis, basi rotundatis, serratis, utrinque ad costa nervisque parce spinosis atque setosis; inflorescentiis magnis, laxis,

umbellulis longe pedunculatis; fructibus ovoideis, 5 mm longis, glabris, 5-carinatis, perspicue 5-sulcatis, pedicellis 1 ad 1.5 cm longis.

An erect shrub about 3 m high. Leaves large, bipinnate, the rachis, partial rachises, and leaflets on both surfaces with scattered, long, slender, nearly straight spines and with more numerous, slender, spreading setae, the spines 3 to 10 mm long, the setae 1.5 to 3 mm in length. Pinnae 5- to 9-foliolate, about 30 cm long; leaflets oblong-ovate, membranaceous, dark brown or olivaceous when dry, the lower surface somewhat paler than the upper, 9 to 12 cm long, 4 to 6 cm wide, sessile, base rounded, often slightly inequilateral, apex acuminate, margins serrate, the teeth apiculate, the spines few, scattered, and mostly confined to the midrib with a few on the primary nerves, fewer on the lower surface than on the upper, the setae more numerous and scattered all over the epidermis on both surfaces. Inflorescences ample, lax, the ultimate branchlets up to 10 cm in length. Umbels subglobose, about 30 fruits in each, the pedicels 10 to 15 mm long, setose. Fruits ovoid, glabrous, about 5 mm long, prominently 5-keeled and deeply 5-sulcate, the depressions broad, rounded.

Kwangtung Province, Chan Tung hill, *Levine 3242*, October 30, 1918, with the local name *lak cha tsui*.

This species is readily distinguished among its congeners by its spiny and setose rachises, partial rachises, leaflets, and inflorescences.

PRIMULACEAE

LYSIMACHIA Tournefort

1844
LYSIMACHIA CANDIDA Lindl. var. DEPAUPERATA var. nov.

A typo differt planta multo minoribus 5 ad 8 cm altus, foliis oblanceolatis ad obovatis, 5 ad 15 cm latis, obtusis vel subacutis, pedicellis quam floribus haud longioribus.

Kwangtung Province, Kochow region, Fung Mun, *To Kang P'eng 2735*, February 22, 1919, in fields.

LYSIMACHIA ALFREDI Hance in Journ. Bot. 15 (1877) 356; Pax & Knuth in Engl. Pflanzenreich 22 (1905) 281.

Kwangtung Province, Shiuchow region, *To Kang P'eng 2858*, *Levine 3524*, April, 1919, in woods.

The identification has been made from the descriptions, the former number cited agreeing better with it than the latter, although differing in some details. The species has previously been known only from Fokien Province.

EBENACEAE

DIOSPYROS Linnaeus

DIOSPYROS SINENSIS Hemsl. in Journ. Linn. Soc. Bot. 26 (1889) 71.

Kwangtung Province, Shiuchow region, *To Kang P'eng* 2785, 2788.

Previously known from Szechuen and Hupeh Provinces, but not before reported from as far south as Kwangtung.

SYMPLOCACEAE

SYMPLOCOS Jacquin

335 SYMPLOCOS FUSONII sp. nov. § *Hopea*, *Lodhra*.

Frutex 2 ad 3 m altus, ramulis castaneo- vel purpureo-pubescentibus, inflorescentiis cinereo-pubescentibus. Foliis coriaceis vel subcoriaceis, glabris, ellipticis ad oblongo-ellipticis, usque ad 5.5 cm longis, nitidis, margine minute glanduloso-serrulatis vel crenulatis, deorsum integris, apice acutis vel brevissime acuminatis, basi acutis, nervis utrinque 5 vel 6, anastomosantibus, costa supra haud impressa; racemis axillaribus, solitariis vel binis, paucifloris, 8 ad 10 mm longis, floribus omnibus pedicellatis; fructibus oblongo-ovoideis, leviter adpresse pubescentibus, circiter 5 mm longis. Species *S. anomalae* affinis.

A shrub 2 to 3 m high, the branches reddish brown, glabrous, the branchlets slender, somewhat angled, castaneous or purplish, appressed-pubescent with short hairs. Leaves coriaceous or subcoriaceous, shining, glabrous, elliptic to oblong-elliptic, 3 to 5 cm long, 1.5 to 3 cm wide, the apex acute or shortly acuminate, base acute, margins minutely glandular-serrulate or crenulate, toward the base usually entire; lateral nerves 5 or 6 on each side of the midrib, slender, anastomosing, the reticulations lax, the midrib not impressed on the upper surface; petioles 2 to 3 mm long, glabrous or when young pubescent. Racemes axillary, solitary, or in pairs, short, few-flowered, appressed cinereous-pubescent, 8 to 10 mm long, simple, usually 5 to 10 flowers in a raceme. Flowers white, their pedicels 1.5 to 2.5 mm long, the apical bracteoles triangular-ovate, acute, about 1 mm long, somewhat pubescent. Calyx pubescent, the tube short, the limb 2.5 mm in diameter, the lobes orbicular-reniform, spreading, rounded, slightly pubescent, about 1 mm long and 1.2 mm wide. Petals glabrous, oblong-elliptic, 3 mm long. Stamens indefinite, the filaments glabrous, 3 to 4 mm long, slightly united below, forming about 5 indistinct phalanges. Ovary 3-celled; style gla-

brous, 5 mm long. Fruits sparingly appressed-pubescent, oblong-ovoid, terete, about 5 mm long.

Kwangtung Province, Kochow region, Lai Tung and Shan Mi, *To Kang P'eng* 2714 (type), 2677, February and March, 1919, the former with the local name *ye cha fa*.

This species, dedicated to Mr. C. G. Fuson, through whose interest it was possible to do some field work in the Kochow region, is distinctly allied to *Symplocos anomala* Brand of Yunnan Province, from which it differs in its shorter, much less acuminate, fewer-nerved leaves, and somewhat longer, more numerous flowered racemes.

537 SYMPLOCOS CHINENSIS (Lour.) Desvaux MS. in herb. Mus. Paris. comb. nov.

Myrtus chinensis Lour. Fl. Cochinch. (1790) 313.

Symplocos sinica Ker in Bot. Reg. 9 (1823) t. 710; Brand in Engl. Pflanzenreich 6 (1901) 34.

Loureiro's material was from the vicinity of Canton, and his description applies unmistakably to the species currently known as *Symplocos sinica* Ker. It is common on hills near Canton and is represented by the following Kwangtung material: *Merrill* 10725, *Levine* 15, 294, 637, 1787, 2372, 3198, 3403. The only recorded local name is *hak tsz* in the Lin District; Loureiro records the Cantonese name as *tan quat xiong*. Among the other new genera and species described by Loureiro *Dicalyx cochinchinensis* Lour. is *Symplocos cochinchinensis* Moore; *Decadia aluminosa* Lour. is apparently identical with *Symplocos spicata* Roxb.; *Drupatris cochinchinensis* Lour. is certainly a *Symplocos*; and *Myrtus zeylanica* Lour. (non Linn.) is probably a *Symplocos*. Loureiro's type of *Myrtus chinensis* is preserved in the herbarium of the Paris Museum of Natural History.

LOGANIACEAE

STRYCHNOS Linnaeus

1079 STRYCHNOS UMBELLATA (Lour.) comb. nov.

Cissus umbellata Lour. Fl. Cochinch. (1790) 84.

Strychnos paniculata Champ. in Hook. Kew Journ. Bot. 5 (1853) 56.

Planchon,¹² in excluding Loureiro's species from the Vitaceae, suggests that it might be a *Strychnos*. I am of the opinion that this is the correct disposition of *Cissus umbellata* Lour., and

¹² DC. Monog. Phan. 5 (1887) 626.

further that it is identical with *Strychnos paniculata* Champ., a species strongly characterized by its 4-merous flowers and the only representative of the genus known from the vicinity of Canton.

LIGUSTRUM Linnaeus

893

LIGUSTRUM GROFFIAE sp. nov.

Frutex circiter 2 m altus, subtus foliis et ramulis et inflorescentiis perspicue molliterque ferrugineo-villosis; foliis oblongo-ovatis, usque ad 7 cm longis, acuminatis, basi acutis, supra olivaceis, nitidis, leviter pubescentibus, subtus pallidioribus, nervis utrinque circiter 6, tenuibus; inflorescentiis axillaribus, paniculatis, 5 ad 6 cm longis, ramis inferioribus usque ad 3 cm longis; floribus numerosis, corolla 4 mm longa, glabra, tubo 2 mm longo.

A shrub about 2 m high, the leaves on the lower surface and especially the branchlets and inflorescences densely and softly ferruginous-villous with spreading hairs. Branches terete, those up to 5 mm in diameter more or less pubescent, the ultimate branchlets about 2 mm in diameter. Leaves chartaceous, oblong-ovate, 5 to 7 cm long, 2.5 to 3 cm wide, apex acuminate, base acute, the upper surface olivaceous, shining, somewhat pubescent, the midrib and nerves impressed, the lower surface paler, softly villous; lateral nerves about 6 on each side of the midrib, slender; petioles 4 to 5 mm long, ferruginous-villous. Panicles axillary, 5 to 6 cm long, many-flowered, the branches usually spreading, the lower ones up to 3 cm in length. Flowers white, fragrant, their pedicels 1 to 2 mm long, glabrous; bracteoles oblong-lanceolate, somewhat acuminate, about 1 mm long. Calyx somewhat cup-shaped, glabrous, 1 to 1.2 mm long, shallowly 4-toothed. Corolla 4 mm long, the tube 2 mm long, the lobes somewhat elliptic, obtuse. Stamens exserted.

Kwangtung Province, Shiuchow region, Tan Ha Shan, *To Kang P'eng* 2820, April 24, 1919, with the local name *mo ch'ung shü*. Possibly referable to this species is No. 2795 of the same collection from the same locality with the local name *sha yeuk shu*; this specimen, however, has much smaller leaves and much-fewer flowered inflorescences than the type.

This species is well characterized by its dense ferruginous-villous indumentum. It is dedicated to Miss Elizabeth H. Groff, through whose interest it was possible to have collections made in the Shiuchow region.

ASCLEPIADACEAE

CRYPTOLEPIS R. Brown

CRYPTOLEPIS SINENSIS (Lour.) comb. nov.

Pergularia sinensis Lour. Fl. Cochinch. (1790) 169.

Emericia sinensis Roem. & Schultes Syst. 4 (1819) 402.

Pergularia chinensis Spreng. Syst. 1 (1825) 836.

Vallaris sinensis G. Don Gen. Syst. 4 (1838) 79.

Cryptolepis elegans Wall. Cat. (1829) No. 1639, *nomen nudum*, G. Don Gen. Syst. 4 (1838) 82.

Aganosma edithiae Hance in Ann. Sci. Nat. Bot. V 5 (1866) 227.

Loureiro's material was from China, presumably from the vicinity of Canton, and has long been considered a species of doubtful status. All the synonyms cited above, except the last two, are based on Loureiro's binomial. The description applies closely to the species currently known as *Cryptolepis elegans* Wall., a species not uncommon in Kwangtung Province and represented by the following specimens: *Merrill 10806, Levine 356, 1850, 3201*. Loureiro described the seeds as naked, perhaps because he saw only those from which the coma had fallen, or perhaps because he really saw no seeds. I am convinced, however, that the species as here interpreted is the one Loureiro intended.

APOCYNACEAE

ALYXIA Banks

ALYXIA LEVINEI sp. nov.

Frutex scandens, glaber, ramis ramulisque tenuibus, olivaceis; foliis oppositis et ternatis, junioribus membranaceis, vetustioribus chartaceis ad subcoriaceis, ellipticis ad oblongis, usque ad 8 cm longis, utrinque subaequaliter angustatis, obtuse acuminatis; inflorescentiis axillaribus brevibus, breviter pedunculatis, ut videtur paucifloris; fructibus junioribus ellipsoideis, circiter 9 mm longis.

A scandent glabrous shrub, the branches and branchlets slender, the internodes up to 25 cm in length, branchlets 1.5 mm in diameter or less, somewhat angled or striate, the older branches terete, smooth, somewhat reddish brown. Leaves opposite and in whorls of three, elliptic to oblong, 5 to 8 cm long, 2 to 3 cm wide, the younger ones membranaceous, the older ones chartaceous to subcoriaceous, olivaceous, shining, subequally narrowed to the acute or somewhat acuminate base and to the bluntly acuminate apex, the nerves often obsolete, never prominent; petioles 4 to 7 mm long. Inflorescences axillary, solitary, short, apparently very few-flowered, their peduncles 5 mm long

or less, obscurely puberulent, the persistent sepals oblong, 1.5 mm long. Young fruit ellipsoid, about 9 mm long.

Kwangtung Province, Ting Woo Mountain, *Levine 1975*, May 26, 1918, scattered along the banks of streams, altitude about 300 meters.

This is the second species of the genus to be found in Kwangtung Province and differs remarkably from *Alyxia sinensis* Champ. in its much larger, differently shaped, acuminate leaves.

LABIATAE

PRUNELLA Linnaeus

PRUNELLA VULGARIS Linn. Sp. Pl. (1753) 600.

Kwangtung Province, Shiuchow region, *To Kang P'eng 2854*, April 25, 1919, with the local name *ha fú ts'o*.

A widely distributed species in the North and South Temperate Zones. Central and northern China and Formosa, but not previously recorded from Kwangtung Province.

BORAGINACEAE

TRIGONOTIS Steven

TRIGONOTIS PEDUNCULARIS (Trev.) Benth. ex Baker & Moore in Journ. Linn. Soc. Bot. 17 (1879) 384.

Myosotis peduncularis Trev. in Schrift. Naturf. Ges. Berl. 7 (1813) 147.

Kwangtung Province, Shiuchow region, *Levine 3543*, along roads, May, 1919.

The genus is new to Kwangtung Province, the species being common in central and northern China, the present locality being far south of its previously known range.

BIGNONIACEAE

DOLICHANDRONE Seemann

DOLICHANDRONE STIPULATA (Wall.) Benth. ex C. B. Clarke in Hook. f. Fl. Brit. Ind. 4 (1884) 379.

Spathodea stipulata Wall. Cat. (1832) No. 6518, *nomen nudum*, Pl. As. Rar. 3 (1832) 20, t. 238.

Kwangtung Province, Kochow region, Kwanshan temple, *To Kang P'eng 2726*, February 18, 1919, with the local name *mau mi muk*.

The Kwangtung specimen is with mature fruits and agrees closely with the description. The species was previously known only from Burma.

ACANTHACEAE

HEMIGRAPHIS Nees

4549
HEMIGRAPHIS PROCUMBENS (Lour.) comb. nov.

Barleria procumbens Lour. Fl. Cochinch. (1790) 377.

Ruellia chinensis Nees in DC. Prodr. 11 (1847) 147.

Hemigraphis chinensis T. Anders. in Journ. Linn. Soc. Bot. 26 (1890) 238.

Strobilanthes scaber Hance in Journ. Bot. 16 (1878) 231, non Nees.

Loureiro's material was from the vicinity of Canton, where the species is still common, and on account of its yellow flowers is rather conspicuous in dry thickets. His description applies unmistakably to the species currently known as *Hemigraphis chinensis* T. Anders. It is represented by *Merrill 10135* and *Levine 181*.

CAPRIFOLIACEAE

LONICERA Linnaeus

LONICERA DASYSTYLA Rehder in Rept. Mo. Bot. Gard. 14 (1903) 158, t. 4, f. 1-3.

Kwangtung Province, North River, Sai Sha, Sz Ooi, *Groff 2402*, April 24, 1918, with the local name *kam ngan fa*.

The specimen agrees closely with Rehder's figure and description, differing in but few minor details. The leaves average smaller than in the type and are glabrous, while the older branchlets are brownish rather than grayish. The pubescent style is characteristic. Previously reported only from Tonkin.

CUCURBITACEAE

GYMNOPETALUM Arnott

1815
GYMNOPETALUM CHINENSE (Lour.) comb. nov.

Euonymus chinensis Lour. Fl. Cochinch. (1790) 156.

Bryonia cochinchinensis Lour. op. cit. 595.

Gymnopetalum cochinchinense Kurz in Journ. As. Soc. Beng. 40² (1871) 57; Cogn. in DC. Monog. Phan. 3 (1881) 391.

Both of Loureiro's descriptions apply unmistakably to the species currently known as *Gymnopetalum cochinchinense* Kurz, and it is indeed curious that he should have placed a cucurbitaceous plant in the Celastraceae genus *Euonymus*. The type of *Euonymus chinensis* was from the vicinity of Canton, for which Loureiro records the Cantonese name *kam qua*. It is represented by the following recently collected material from the vicinity of Canton, with the recorded names *ka shui kwah* and *ye kwah*, *Levine 1108*, *1705*, *2183*.

RUBIACEAE

PLECTRONIA Linnaeus

13360
PLECTRONIA LEVINEI sp. nov.

Frutex glaber, ramis spinis longis rigidis rectis armatis; foliis chartaceis, ellipticis ad oblongo-ellipticis, 1.5 ad 4 cm longis, obtusus ad acutis, basi angustatis, acutis, nervis utrinque 2 vel 3, obscuris, subtus in axillis subobsolete glandulosis, reticulis obsoletis; fructibus axillaribus, solitariis, tenuiter pedicellatis, ovoideis, in siccitate nigris vel pruinosis, rugosis, circiter 6 mm longis.

A glabrous shrub, the branches terete or the ultimate branchlets obscurely angled. Leaves usually in pairs on two very short opposite branchlets, appearing like four leaves at each node, chartaceous, elliptic to oblong-elliptic, or sometimes somewhat obovate, rather pale when dry, slightly shining, 1.5 to 4 cm long, 1 to 2 cm wide, obtuse to acute, base narrowed, acute; lateral nerves 2 or 3 on each side of the midrib, slender, indistinct, their axils obscurely glandular on the lower surface, the reticulations obsolete; petioles 1 to 2 mm long; stipules about 1 mm long. Fruits axillary, solitary, black or somewhat pruinose, rugose, ovoid, about 6 mm long, when young crowned by the cylindric, 5-toothed, about 4 mm long calyx-tube, this soon deciduous, the pedicels 10 to 12 mm long, slender. Seeds usually two. Spines straight or slightly curved, stiff, rather slender, sharp, 1 to 1.5 cm long.

Kwangtung Province, Heung Shan District, near Macao, *Levine* 3487, January 18, 1919.

This species belongs in the group with *Plectronia horrida* Benth. & Hook. f., *P. parvifolia* Benth. & Hook. f., and *P. parviflora* Bedd., but is readily distinguished by being entirely glabrous, and by its solitary, slenderly pedicelled fruits.

WENDLANDIA Bartling

13091
WENDLANDIA CHINENSIS sp. nov.

Species *W. paniculatae* affinis, differt stipulis hirsutis, inflorescentiis densissime cinereo-villosis, floribus dense confertis, glomeratim dispositis, more *W. tinctoriae*.

A shrub or small tree up to 8 m high, the branches glabrous or nearly so, the branchlets more or less brownish- or cinereous-pubescent. Leaves chartaceous, oblong-elliptic to oblong-lanceolate, olivaceous and shining when dry, 10 to 12 cm long, 3 to 5 cm wide, subequally narrowed to the acute base and rather slenderly acuminate apex, the upper surface very slightly sub-

strigose-hirsute with widely scattered, short hairs, the lower surface sparingly pubescent with widely scattered, short, cinereous hairs on the midrib, nerves, reticulations, and epidermis; lateral nerves about 10 on each side of the midrib, distinct; petioles 5 to 10 mm long; stipules coriaceous, persistent, orbicular-reniform, somewhat hirsute, 7 to 9 mm wide, rounded, sometimes contracted below and distinctly stipitate. Panicles terminal, ample, up to 20 cm long and wide, densely cinereous-villous. Flowers very numerous, densely crowded in glomerules on the ultimate branches; bracts 5 to 7 mm long. Calyx densely cinereous-villous, about 2.5 mm long, the lobes oblong. Corolla-tube 4 to 5 mm long, slender, glabrous externally, sparingly pubescent within.

Kwangtung Province, Kochow region, Shek Kau Tong, *To Kang P'eng* 2691 (type), March 6, 1919. To this species I also refer the following specimens, both described as shrubs about 2 m high, both with somewhat smaller leaves than the type and with unopened flowers: *To Kang P'eng* 2754, 2702, the former from Sheung Ko Wan, with the local name *fo shiu nap*, the latter from Shek Ling, with the local name *chü lüt shü*.

This species is manifestly allied to *Wendlandia paniculata* (Roxb.) DC., the type of which was from the Molucca Islands. Comparison with Amboina material, *Robinson 1731*, representing the typical form of Roxburgh's species, shows that the Chinese form differs radically in its very densely cinereous-villous inflorescences and calyces, and in its very densely crowded flowers, in the disposition of the flowers strongly resembling *Wendlandia tinctoria* DC. The Chinese form described by Hance as *Wendlandia uvariifolia* has been reduced to *Wendlandia paniculata* DC. It is represented by *Levine 2338*, from the North River region, and is distinctly different from *Wendlandia paniculata* and I believe should be retained as of specific rank under Hance's name. It differs from both *Wendlandia paniculata* DC. and *W. chinensis* Merr. in its leaves being rather densely ferruginous-pubescent beneath, while the disposition of the flowers and the indumentum of the inflorescences and calyces are quite different from the latter species.

MUSSAENDA Linnaeus

MUSSAENDA PARVIFLORA Miq. Ann. Mus. Bot. Lugd.-Bat. 3 (1867)
110.

Kwangtung Province, Ting Woo Mountain and at Wan Lo Mountain, Kochow region, *Levine 1979*, *To Kang P'eng* 2692, April, 1918, and March, 1919.

The specimens agree closely with Formosan material and also conform to Miquel's description. I believe this to be, at least in part, the Kwangtung form referred by Dunn and Tutcher to *Mussaenda frondosa* Linn., but I have seen no Chinese material at all approaching the typical Ceylon form of the Linnean species.

RANDIA Linnaeus

13361

RANDIA ACUMINATISSIMA sp. nov.

Arbor parva, usque ad 8 mm alta, ramulis et inflorescentiis et subtus foliis ferrugineo-pubescentibus; foliis chartaceis, oblongo-ellipticis ad oblongo-lanceolatis, usque ad 20 cm longis, utrinque angustatis, basi acutis, apice tenuiter caudato-acuminatis, supra in siccitate olivaceis, glabris, nitidis; nervis utrinque 10 ad 12, subtus perspicuis; stipulis lineari-lanceolatis, acuminatis, usque ad 1 cm longis; cymis oppositifoliis, 3 ad 4 cm longis, breviter pedunculatis; floribus ad apices ramulorum confertis, calycis segmentis lanceolatis, acuminatis, circiter 1.5 mm longis; fructibus globosis, glabris, 6 ad 8 mm diametro, in siccitate nigris, nitidis; seminibus numerosis, compressis, circiter 1.5 mm diametro.

A small tree about 8 m high, the branchlets, inflorescences, and the lower surface of the leaves rather densely ferruginous-pubescent. Branches dark reddish brown, usually terete, glabrous. Leaves oblong-elliptic to oblong-lanceolate, chartaceous, 11 to 20 cm long, 4 to 7 cm wide, subequally narrowed below to the acute, equilateral base, and above to the slenderly caudate-acuminate apex, the acumen sometimes falcate, the upper surface glabrous, olivaceous and shining when dry, the lower surface rather softly pubescent; lateral nerves 10 to 12 on each side of the midrib, prominent on the lower surface, anastomosing, the reticulations rather lax, distinct; petioles usually pubescent, 5 to 8 mm long; stipules linear-lanceolate, acuminate, pubescent, up to 1 cm long. Cymes leaf-opposed, shortly peduncled, ferruginous-pubescent, 3 to 4 cm long (corollas unknown), the flowers sessile or shortly pedicelled and somewhat crowded at the tips of the branchlets. Calyx ferruginous-pubescent, about 4 mm long, the lobes lanceolate, acuminate, about 1.5 mm long. Fruits globose, glabrous, 6 to 8 mm in diameter, black and shining when dry. Seeds many, flattened, orbicular-ovate to ovate, about 1.5 mm long.

Kwangtung Province, White Cloud Mountain, *Levine* 3130 (*type*) 3267, August 29, November, 1918; Kong Moon, *Groff*

2471, March, 1918; Ukantin, *Hongkong Herbarium* 10918, distributed as *Randia densiflora* Benth.

This species is manifestly allied to *Randia racemosa* (Cav.) F.-Vill. (*R. densiflora* Benth.), from which it is easily distinguished by its indumentum.

COMPOSITAE

GYNURA Cassini

GYNURA SEGETUM (Lour.) comb. nov.

Cacalia segetum Lour. Fl. Cochinch. (1790) 486, in nota.

Cacalia pinnatifida Lour. l. c. non Linn.

Gynura pinnatifida DC. Prodr. 6 (1837) 301.

Kwangtung Province, Kochow region, Kwong T'am Mountain, To Kang P'eng 2671, March 22, 1919, in a garden, with the local name *tung fung ip*.

The type of Loureiro's species was from Canton, where he observed it growing in rice paddies. He records the Cantonese name as *cien fan sat*. His description applies closely to the specimen cited above. I consider his specific name *pinnatifida* to be invalidated by the earlier *Cacalia pinnatifida* Linn., an entirely different species, and hence adopt the casual name published by him: "unde vernaculum nomen Sinense *Cacalia Segetum*."

CROSSOSTEPHIUM Lessing

CROSSOSTEPHIUM CHINENSE (Linn.) comb. nov.

Artemisia chinensis Linn. Sp. Pl. (1753) 649, excl. syn. Gmelin; Lour. Fl. Cochinch. (1790) 492. 8

Artemisia judaica Lour. Fl. Cochinch. (1790) 489, non Linn.

Crossostephium artemisioides Less. ex Cham. & Schlecht. in *Linnaea* 6 (1831) 220.

The genus *Crossostephium* was based on cultivated specimens from Manila and from Canton, the species being widely cultivated in Japan, China, the Philippines, and Indo-China. I have seen no specimens from wild plants, although the species is manifestly a native of either China or Japan. It is currently known in Manila, where it is cultivated in pots, as *ajenjo*, a Spanish name properly belonging to *Artemisia*. The type of the Linnean species was a specimen collected in China by Lagerstroem, and the Linnean description based on this specimen clearly applies to the species currently known as *Crossostephium artemisioides* Less. The species is still common in cultivation in Canton. Both of Loureiro's descriptions cited above apply to this species.

EMILIA Cassini

EMILIA PRENANTHOIDEA DC. Prodr. 6 (1837) 303.

Kwangtung Province, Teng Woo Mountain, *Levine 2041, 3221*, May 26, 1918.

India to the Philippines; this species has previously been tentatively recorded from China by Forbes and Hemsley,¹³ who state that in preparing their list they had recorded the species from China on the basis of a specimen collected by Fortune, but that the specimen was not to be found at the time their manuscript was written. The species is readily distinguished from *Emilia sonchifolia* DC. not only by its narrow leaves, but also by its involucral bracts being much shorter than the flowers and by its glabrous achenes.

SENECIO Tournefort

SENECIO OLDHAMIANUS Maxim in Bull. Acad. Pétersb. 16 (1871) 219.

Kwangtung Province, Shiuchow region, *To Kang P'eng 2852*, April 25, 1919, in grassy places.

Not previously recorded from Kwangtung Province; common in central China.

¹³ Journ. Linn. Soc. Bot. 23 (1888) 449.